

## **REMARKS**

This paper is filed in response to the Office Action mailed September 24, 2009. Claims 8-11 and 13-24 are pending in the application. Claims 1-7 and 12 have been withdrawn. Claim 13 has been amended. Claims 22-24 is newly presented. Applicants respectfully request reconsideration of the claims in view of the amendments and remarks made herein.

### **Claim Amendments**

Claims 12, 13, and 14 have been amended. Claims 22-24 are newly presented. Applicants submit that adequate support for these amendments rests in the application as filed as follows:

Claim 12, while withdrawn by the Examiner, has been amended to clarify that the further limitation of the optically active isocyanate is a further limitation of the optically active isocyanate in the reaction between “one or more polyamines...and an optically active monoisocyanate”. Support for this limitation can be found in at least original claim 12 and page 3, lines 1-13, and page 12, lines 5-15 of the application as filed.

Claim 13 has been amended and support for this amendment may be found in at least claim 13 as originally filed as well as page 6 line 20 – page 7 line 25 of the application as filed.

Claim 14 has been amended to clarify that the further limitation of the optically active amine is a further limitation of the optically active amine in the reaction between “one or more polyisocyanates ... with one or more optically active carbon-substituted methylamines ... not as racemic mixture...” Support for this limitation can be found in at least original claim 14, and page 2 line 18-page 3 line 1, page 11 lines 3-25 of the application as filed.

Claims 22, 23 and 24 are newly presented but are identical in scope to the narrowing limitations of the hydrocarbyl group of claim 13 as originally filed.

Therefore, Applicants submit that no new matter has been added.

## **Traversal of Restriction of Claim 12**

The Examiner indicates that, in response to the Examiner's restriction requirement of a particular species for prosecution on the merits, that "Applicant elected alpha-methylbenzylamine as a methylamine species for prosecution on the merits, thus claim 12 is withdrawn from consideration." Further, the Examiner indicates that "Applicant elected hexamethylene-1,6-diisocyanate as a monoisocyanate species. However, it is noted that hexamethylene-1,6-diisocyanate is not a monoisocyanate."

Applicants respectfully traverse the Examiners withdrawal of claim 12 under 37 C.F.R. §1.143, and moreover the requirement to amend claim 14 in order to address hexamethylene-1,6-diisocyanate.

As a preliminary matter, Applicants respectfully submit that a misunderstanding may exist in regard to the "amine" and "isocyanate" species in the previous restriction requirement borne out of a potential misunderstanding of the present invention.

The present invention as embodied in claim 8 requires a rheology modification agent that is obtainable by "reacting one or more polyisocyanates...with one or more optically active carbon-substituted methylamines ...not as a racemic mixture, **or** by reacting one or more polyamines ... with one or more optically active monoisocyanates ...not as a racemic mixture...." The inventors of the instant claimed invention surprisingly discovered that, where either the amines or the isocyanates according to claim 8 are optically active and non-racemic, and where these amines and isocyanates according to claim 8 are reacted to create a rheology modification agent, the resulting rheology modification agent is improved over conventional rheology modification agents. This is shown in detail in the examples discussed in the application as filed starting at page 19, line 15. Moreover, this was acknowledged in the International Preliminary Report on Patentability, issued January 09, 2006 and attached herewith for the Examiner's convenience as Exhibit A.

With this background, Applicants submit that the Examiner's withdrawal of claim 12 and objection to claim 14 are non-sequitur. Claim 12, as amended, now clarifies that that the further limitation of the optically active isocyanate is a further limitation of the optically active

isocyanate in the reaction between “one or more polyamines...and an optically active monoisocyanate” of claim 8. Claim 14, as amended, now clarifies that the further limitation of the optically active amine is a further limitation of the optically active amine in the reaction between “one or more polyisocyanates ... with one or more optically active carbon-substituted methylamines ... not as racemic mixture...” of claim 8. Because claim 14 refers to the reaction between the polyisocyanates and the carbon-substituted methylamines, the Examiner’s concern that “hexamethylene-1,6-diisocyanate is not a monoisocyanate” is obviated.

Moreover, Applicants submit that withdrawal of claim 12 in view of the aforementioned arguments is also improper, and claim 12 as amended should be reinstated.

### **35 U.S.C. §112**

Claim 13 stands rejected under 35 U.S.C. §112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Specifically, the Office Action indicates that “a broad range or limitation together with a narrow range or limitation that falls within the broad range or limitation (in the same claim) is considered indefinite...” and “claim 13 recites the broad recitation ‘wherein the hydrocarbyl is selected ... and alkenyl’, and the claim also recites ‘preferably selected from’ which is narrower statement of the range/limitation.”

Applicants respectfully submit that claim 13 has been amended to remove the narrower range limitations of “preferably selected from the group consisting of linear or branched C1-C25 alkyl, even more preferably selected from the group consisting of linear or branched C1-C5 alkyl, and most preferably R is a methyl or ethyl group”. These limitations may now be found in newly presented claims 22-24 respectively.

As such, Applicants submit that the instant §112 rejection of claim 13 has been obviated and should therefore be withdrawn.

### **35 U.S.C. §102(b)**

Claims 8-11, 13-15 and 19-21 stand rejected under 35 U.S.C. §102(b) as being anticipated by Kurasaki et al (JP 2000-226442) (hereinafter the “Kurosaki” reference).

In order for a reference to be anticipating, each and every limitation of the claims must be disclosed in that reference. MPEP § 2131. Where the reference fails to disclose a claimed limitation, rejection on the basis of §102(b) is improper.

Applicants traverse and respectfully submit that a proper §102(b) rejection has not been made.

The Office Action indicates that “regarding claim 8, Kurosaki et al discloses a rheology modification agent (curing accelerators-abstract) obtained by reacting one or more polyisocyanates....with one or more optically active carbon-substituted methylamines of formula I, wherein the amine of formula I is not an optically active amino acid and not an optically active amino acid ester (methylbenzyl amine – paragraph 0007).” Applicants have reviewed paragraph 0007 of the machine translated text and do not see any discussion of optical activity of amines or isocyanates.

Further, Kurosaki fails to teach several limitations of the claimed invention. For example, Kurosaki does not teach or suggest a rheology modification agent at all. Applicants respectfully submit that the discussion of a curing accelerator in Kurosaki is not relevant to claimed invention, which is directed toward rheology modification agents. Rheology modification agents in coating compositions relate to modifications of properties of coating composition such as viscosity and shear (see application as filed page 1, lines 21-25).

Moreover, Kurosaki fails to teach a non-racemic mixture of amines and isocyanates in a rheology modification agent, as required by claim 8 of the present invention. In fact, Kurosaki does not discuss the concept of non-racemic or racemic mixtures of ingredients at all. Further, Applicants submit that the choice of non-racemic mixtures is not a trivial one, as it requires the separation of enantiomers, a process known to one of ordinary skill in the art as resolution. (See Exhibit C, page 143 of ORGANIC CHEMISTRY, 2<sup>nd</sup> Ed. Browne and Foot). Further, it should be appreciated that in the synthesis of chiral compounds, the default for such synthesis is that the chiral compounds appear in racemic mixtures (50% R enantiomer and 50% S enantiomer) (See Exhibit B, page 186 of ORGANIC CHEMISTRY by Clayden et al.). Thus where a reference does not discuss racemic/non-racemic – it cannot be assumed that non-racemic exists.

In sum, Kurosaki fails to teach several limitations of the claimed invention and therefore the §102 rejection of claims 8-11, 13-15 and 19-21 as amended is improper and should be withdrawn.

### **35 U.S.C. §103**

Claims 8-11, 13-16, 18-21 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Buter (4,311,622) in view of Kurosaki et al (JP 2000-226442).

Alternatively, claims 8-11 and 13-21 are rejected under 35 USC 103(a) as being unpatentable over Buter (4,311,622) in view of Kurosaki et al (JP 200-226442) and further in view of Flosbach et al (6,815,501).

To establish a *prima facie* case of obviousness, the Examiner must demonstrate three elements: some suggestion or motivation to modify or combine the reference teachings, a reasonable expectation of success, and the combined prior art references must teach or suggest all the claim limitations. MPEP § 2141. Applicants respectfully submit that the Examiner has failed to establish a *prima facie* case of obviousness, in that the Examiner has failed to provide a combination of prior art references, alone or with general knowledge that teach or suggest all the claim limitations.

Applicants hereby incorporate the discussion of the Kurosaki reference under §102 above into the instant response to the §103 rejection. As such, Applicants submit that Kurosaki fails to teach several limitations of the claimed invention, including the use of a non-racemic mixture of amines and isocyanates in a rheology modification agent, where either the amine or the isocyanate is optically active. None of the other references cited by the Examiner cure this deficiency.

Buter relates to a “thixotropic coating composition that is prepared from a binder and a sag control agent which is the reaction product of a diisocyanate and a monamine or hydroxy monoamine”. (Abstract). However, Buter does not discuss optical activity, nor does Buter even mention the concept of implementing non-racemic mixtures of isocyanates and amines in a rheology modification agent. Indeed, the Examiner admits as much in stating “Buter does not

disclose the monoamine being one or more optically active carbon –substituted methylamines of formula I...”. As such, Buter cannot cure the defects of Kurosaki.

Moreover, there is no suggestion or motivation to combine Kurosaki and Buter to arrive at the claimed invention. As there is no suggestion or motivation, there can be no reasonable expectation of success. As such, the combination of Kurosaki and Buter cannot render claims 8-11 and 13-21 as amended obvious, and therefore the §103 rejection is improper with respect to these references and should be withdrawn.

As an alternative combination, the Examiner puts forth the combination of Kurosaki, Buter and Flosbach. However, as discussed above, the combination of Kurosaki and Buter cannot render the claimed invention obvious because the combination fails to teach or suggest the use of a non-racemic mixture of amines and isocyanates in a rheology modification agent, where either the amine or the isocyanate is optically active.

Flosbach does not cure this defect. The Examiner states that “Flosbach et al discloses a dual cure coating composition based on acryloyl functional compounds (col.3, lines 52; col 6, lines 49) using a sag control agent prepared from amines and polyisocyanate (col 8, line 34). The teachings demonstrate that a sag control agent prepared from amines and polyisocyanate are recognized in the art as suitable additive for coating systems.”

However, nowhere does the Examiner assert, nor does Flosbach disclose, optically active amines or isocyanates in non-racemic mixtures for use in a rheology modification agent. As such, Applicants submit that the combination of Kurosaki, Buter and Flosbach do not teach the limitations of the claimed invention.

Moreover, the combination of the cited references do not suggest or provide motivation to modify and/or combine the cited references to arrive at the claimed invention. Indeed, no teaching or suggestion of optically active ingredients in a rheology modification agent is present in any of the cited references. As such, Applicants submit that the instant §103 rejection in view of Kurosaki, Buter and further over Flosbach is improper and should be withdrawn.

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Applicants believe that the present pending claims are in condition for allowance. Applicants respectfully request that the Examiner reconsider the rejection of the pending claims in light of the above analysis and amendments. Applicants reserve the right to present additional comments related to the differences between the present invention and the subject matter of the cited references.

Any extension of time that may be deemed necessary to further the prosecution of this application is hereby requested. The Commissioner is authorized to charge any additional fees which may be required, or credit any overpayment, to Deposit Account No. 08-3038, referencing the docket number shown above.

Should issue of a final rejection be considered, the Examiner is respectfully requested to contact the undersigned by telephone at the number given below or by email to [haitjemac@howrey.com](mailto:haitjemac@howrey.com) in order to schedule a telephone interview.

Respectfully submitted,

/chaitjema/

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